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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/525,446	03/14/2000	Young-Joon Song	K-090C	8437

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FLESHNER & KIM, LLP
P.O. BOX 221200
CHANTILLY, VA 20153

EXAMINER

LEE, CHI HO A

ART UNIT	PAPER NUMBER
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2663

DATE MAILED: 08/05/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/525,446

Applicant(s)

SONG, YOUNG-JOON

Examiner

Andrew Lee

Art Unit

2663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on July 10 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9, 11. 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to because label fig. 13A is missing. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 7-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 7, 9 recites the limitation "the first selected code sequence" in line 13.

There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 4, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aslanis et al U.S. Patent Number 5,901,180 in view Hosur et al U.S. Patent Number 6,356,605.

Re Claims 1, 4, 6, Aslanis et al teaches monitoring for frame synchronization and upon loss of frame synchronization performing resynchronization. Fig. 2 teaches a synchronization state 80 (establishing a chip synchronization) using the contents of each synchronizing frame (chip sequence) (See col. 8, lines 24-44); step 84 determines whether the correlated exceeds a predefined threshold (determining maintenance of the established frame synchronization) (See col. 9, lines 5-22); step 94 restores the frame synchronization by using the pilot bit pattern (See col. 9, lines 46-68) wherein the succeeding synchronization frame includes the pilot symbol (pilot bit patterns) and once restored fig. 2 loops back to step 80 to confirm frame synchronization.

As Aslanis uses the MAX correlation value for the frame synchronization state, Aslanis fails to explicitly teach the maximum correlation "results of opposite polarities at a starting point or middle point of a correlation period for each received frame."

However, Hosur et al teaches antenna diversity frame synchronization with WCDMA system wherein the transmitted pilot symbols are polarized and received by the receiver correlator to determine the MAX correlation to determine the synchronization signal (See col. 5, lines 35-60). It is apparent to one skilled in the art due to transmission delay, the Max correlation value may occur in the starting or middle of the correlation period. One skilled in the art would have been motivated by Hosur et al to determine the MAX correlation relating the polarized pilot symbols to increase diversity and reduce a bit error rate (See col. 5, lines 35-38). Therefore, it would have been obvious to one ordinary skilled in the art to combine the teaching of Hosur into the teaching of Aslanis.

Re Claim 2, refer to Claim 1, wherein once loss of synchronization is determined, resynchronizing the succeeding frame.

Re Claim 5, refer to Claim 1, in particular the polarized pilot symbol of Hosur et al.

6. Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aslanis et al U.S. Patent Number 5,901,180 in view of Hosur et al U.S. Patent Number 6,356,605 as applied to Claim 1 and further in view Sawahashi et al U.S. Patent Number 5,940,433.

Re Claims 7-12, Aslanis in view of Hosur teaches frame synchronization for antenna diversity WCDMA system with frame confirmation and restoration. Aslanis in view of Hosur fails to explicitly teach "selecting a first code having a maximum autocorrelation...a specific delay point; selecting a second code having the same autocorrelation characteristic as the first code sequence...same specific delay point;"


However, Sawahashi et al teaches a base algorithm of the spreading code acquisition according to fig. 3 (See col. 6, lines 1-45 & also see fig. 7) for performing frame synchronization. In particular in S1 (Primary Acquisition Mode), the receiver detects the MAX correlation Peak energy by performing searching operation on respective spreading code interval (selecting a first sequence code...having a MAX autocorrelation). S2 (Secondary Acquisition Mode), the correlation detections is carried out between the received signal and the spreading coded replica at the received replica in the succeeding spreading code period to determines the MAX correlation Peak energy (selecting a second code sequence).

One skilled in the art would have been motivated by Sawahashi et al to select the code sequences with MAX autocorrelation energy to enable reliable synchronization process. By combining Max Correlation detection of Sawahashi with the correlator 408 of Hosur, Maximum autocorrelation value of the STTD encoded pilots symbol of correlated to determine the MAX value of the pilot sequences to perform reliable synchronization. Therefore, it would have been obvious to one ordinary skilled incorporate the teaching of Sawahashi et al into the teaching Aslans in view Hosur et al.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Lee whose telephone number is 703-305-1500. The examiner can normally be reached on Monday to Friday from 8:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 703-308-5340. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.



AI
July 27, 2003